APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,888	06/25/2003	Brian D. Johnson	15114-093900US	4896

20350 7590 04/07/2006	EXAMINER
TOWNSEND AND TOWNSEND AND CREW, LLP	WILSON, YOLANDA L

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

ART UNIT	PAPER NUMBER
2113	

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/603,888	JOHNSON ET AL.
	Examiner	Art Unit	
	Yolanda L. Wilson	2113	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>*25 June 2003*</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-40* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12-40* is/are rejected.

7)☒ Claim(s) *11* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Claim Objections

1.   Claim 10 is objected to because of the following informalities: Claim 10 currently

ends in a semicolon and the proper ending is a period. Appropriate correction is

required.

2.   Claim 11 is objected to as being dependent upon a rejected base claim, but

would be allowable if rewritten in independent form including all of the limitations of the

base claim and any intervening claims.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another
> filed in the United States before the invention by the applicant for patent or (2) a patent granted on an
> application for patent by another filed in the United States before the invention by the applicant for patent,
> except that an international application filed under the treaty defined in section 351(a) shall have the effects
> for purposes of this subsection of an application filed in the United States only if the international application
> designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 1-3,5,6,9,10,12-15,17-24,26-40 are rejected under 35 U.S.C. 102(e) as

being anticipated by Schultz et al. (USPN 6429682B1). As appears in claim 1, Schultz

et al. discloses an I/O connection adapted to communicate an I/O value and having a

configurable attribute in column 4, line 66 – column 5, line 16; column 6, lines 32-51; a

configuration memory adapted to store a first attribute value that configures the

configurable attribute in column 6, lines 17-51; a diagnostic interface adapted to

communicate the I/O value in column 8 lines 30-40; and a diagnostic controller having a

first mode adapted to communicate the I/O value between the I/O connection and the

diagnostic interface in column 4, lines 59-61; column 6, lines 32-51; column 8, lines 27-

29 and having a second mode adapted to receive the first attribute value from the

diagnostic interface and to store the received first attribute in the configuration memory,

thereby configuring the configurable attribute of the I/O connection in column 22, lines

20-39. The IOBs are the I/O blocks that are also configured within the IOBs and are

used to transmit values. The configurable attributes are for configuring both the CLBs

and the IOBs.

5.   As per claim 2, Schultz et al. discloses wherein the second mode is further

adapted to read a second attribute value previously stored in the configuration memory

and to send the second attribute value to the diagnostic interface, wherein the second

attribute value previously configured the configurable attribute in column 20, lines 20-39;

column 20, line 58 – column 23, line 2; and Figure 7D. Each configurable attribute is

stored in the frame memory and each attribute is readout from the frames it is stored in

during the readback process.

6.   As per claim 3, Schultz et al. discloses wherein the configuration memory is

further adapted to store a second attribute value that configures a second configurable

attribute in column 6, lines 17-51; and wherein the second mode of the diagnostic

controller does not store the second attribute value in the configuration memory,

wherein the second configurable attribute is unassociated with the I/O connection in

column 22, lines 20-29.

7.   As per claim 5, Schultz et al. discloses wherein the I/O configuration memory

comprises a shift register adapted to shift in and store the first attribute value and to

shift out and output the second attribute value in column 18, lines 28-36.

8.   As per claim 6, Schultz et al. discloses wherein the diagnostic interface

comprises a serial data connection in column 8, lines 24-41. JTAG is a serial data

connection.

9.   As per claim 9, Schultz et al. discloses a configuration interface adapted to

receive a set of attribute values for a set of configurable attributes of the device from a

configuration device in column 4, lines 44-47; and a configuration controller adapted to

store the set of attribute values in the configuration memory, thereby configuring the set

of configurable attributes of the device in column 8, lines 8-11.

10.   As per claim 10, Schultz et al. discloses wherein the set of attribute values

include a second attribute value configuring the configurable attribute of the I/O

connection in column 6, lines 32-51;[[.] The configurable attributes are for also

configuring the IOBs.

11.   As per claim 12, Schultz et al. discloses wherein the configuration controller is

further adapted to receive a signal and to retrieve the set of attribute values in response

to the signal in column 4, lines 52-61.

12.   As per claim 13, Schultz et al. discloses wherein the signal is received from a

source external to the device in column 4, lines 52-61.

13.   As per claim 14, Schultz et al. discloses wherein the signal is received from the

diagnostic controller in column 4, lines 52-61; column 8, lines 27-29.

14.   As per claim 15, Schultz et al. discloses wherein the diagnostic controller further includes a third mode for receiving a configuration instruction from the diagnostic interface and generating the signal in response to the configuration instruction in column 4, lines 52-61.

15.   As per claim 17, Schultz et al. discloses wherein the device is an integrated circuit in column 4, lines 19-22. A FPGA is an integrated circuit.

16.   As per claim 18, Schultz et al. discloses wherein the device is a programmable logic device in column 4, lines 19-22.

17.   As per claim 19, Schultz et al. discloses a system having a plurality of devices connected with the device in figure 2A and in column 23, lines 39-42.

18.   As per claim 20, Schultz et al. discloses the system further includes a configuration device in column 4, lines 30-42.

19.   As per claim 21, Schultz et al. discloses a circuit board having a plurality of additional devices mounted thereto, such that the device is connected with at least one other device on the circuit board in figure 2A and in column 23, lines 39-42.

20.   As per claim 22, Schultz et al. discloses wherein the circuit board further includes a configuration device in column 4, lines 30-42.

21.   As per claim 23, Schultz et al. discloses an I/O connection adapted to communicate an I/O value in column 4, lines 66 – column 5, line 16; column 6, lines 32-51; a set of configurable attributes defining the function of the device in column 4, lines 58-61; a configuration memory adapted to store the set of attribute values configuring the configurable attributes in column 6, lines 17-51; a configuration interface adapted to

receive the set of attribute values from a configuration device in column 4, lines 44-47; a

configuration controller adapted to store in the configuration memory the set of attribute

values received by the configuration interface in response to a configuration signal,

thereby configuring the set of configurable attributes of the device in column 8, lines 8-

11; a diagnostic interface adapted to communicate the I/O value of the I/O connection in

column 8, lines 30-40; and a diagnostic controller having a first mode adapted to

communicate the I/O value between the I/O connection and the diagnostic interface in

column 4, lines 59-61; lines 32-51; column 8, lines 27-29 and having a second mode

adapted to send the configuration signal to the configuration controller in column 22,

lines 20-39. The IOBs are the I/O blocks that are also configured within the IOBs and

are used to transmit values. The configurable attributes are for configuring both the

CLBs and the IOBs.

22.   As per claim 24, Schultz et al. discloses wherein the diagnostic controller is

further adapted to receive the configuration instruction from the diagnostic interface and

to send the configuration signal to the configuration controller in response to the

configuration instruction in column 4, lines 52-61.

23.   As per claim 26, Schultz et al. discloses wherein the configuration controller is

further adapted to receive the configuration signal from a source external to the device

in column 4, lines 52-61.

24.   As per claim 27, Schultz et al. discloses wherein the device is an integrated

circuit in column 4, lines 19-22. A FPGA is an integrated circuit.

25.   As per claim 28, Schultz et al. discloses wherein the device is a programmable

logic device in column 4, lines 19-22.

26.   As per claim 29, Schultz et al. discloses receiving a diagnostic instruction from a

diagnostic interface in column 4, lines 52-61; communicating an I/O value from the I/O

connection to the diagnostic interface when the diagnostic instruction is of a first type in

column 4, lines 59-61; column 6, lines 32-51; column 8, lines 27-29; receiving an

attribute value associated with the attribute of the I/O connection from the diagnostic

interface when the diagnostic instruction is of a second type and storing the attribute

value in a configuration memory, thereby configuring the I/O connection, when the

diagnostic instruction is of the second type in column 22, lines 20-39. The IOBs are the

I/O blocks that are also configured within the IOBs and are used to transmit values. The

configurable attributes are for configuring both the CLBs and the IOBs.

27.   As per claim 30, Schultz et al. discloses wherein storing the attribute value

comprises: shifting the attribute value into a shift register; shifting a previously stored

attribute value of the I/O connection out of the shift register; and communicating the

previously stored attribute value with the diagnostic interface in column 18, lines 28-36.

28.   As per claim 31, Schultz et al. discloses wherein the diagnostic interface

comprises a serial data connection.

29.   As per claim 32, Schultz et al. discloses wherein the diagnostic interface is a

JTAG interface in column 8, lines 24-41. JTAG is a serial data connection.

30.   As per claim 33, Schultz et al. discloses receiving a configuration signal via the

diagnostic interface in column 4, lines 52-61; retrieving a set of attribute values defining

the function of the reconfigurable device from a configuration device via a configuration

interface in response to the configuration signal in column 4, lines 44-47; in column 8,

lines 8-11; and storing the set of attribute values in the configuration memory, thereby

defining the function of the reconfigurable device in column 6, lines 17-51. The

reconfigurable device is the FPGA, the configuration device is the configuration circuit,

and the configuration interface is the configuration pins.

31.   As per claim 34, Schultz et al. discloses wherein the set of attribute values

includes a second attribute value associated with the attribute of the I/O connection in

column 6, lines 32-51. The configurable attributes are for also configuring the IOBs.

32.   As per claim 35, Schultz et al. discloses wherein receiving the configuration

signal, retrieving the set of attribute values, and storing the set of attribute values are

disabled when the diagnostic instruction is of the second type in column 22, lines 20-39.

A mode of readback is performed.

33.   As per claim 36, Schultz et al. discloses a reconfiguration device having a stored

set of device attributes in column 4, lines 19-22; a reconfigurable device having a set of

configurable attributes and adapted to received the stored set of device attributes,

thereby configuring the reconfigurable device in column 6, lines 17-51 and Figure 2A;

and a diagnostic interface adapted to interface with the reconfigurable device and with

an external testing device, thereby communicating an I/O value associated with an I/O

connection of the reconfigurable device to the external testing device in column 4, line

66 – column 5, line 16; column 6, lines 32-51; column 8, lines 30-40; wherein the

reconfigurable device includes a configuration controller adapted to initiate the reception

of the stored set of device attributes in response to a configuration signal in column 8,

lines 8-11, and a diagnostic controller having a first mode adapted to communicate the

I/O value between the I/O connection and the diagnostic interface in column 4, lines 59-

61; column 6, lines 32-51; column 8, lines 27-29 and having a second mode adapted to

send the configuration signal to the configuration controller in column 4, lines 52-61.

34.   As per claim 37, Schultz et al. discloses wherein the diagnostic controller is

further adapted to receive from the diagnostic interface a second set of device attributes

adapted to configure the reconfigurable device in column 6, lines 32-51. The

configurable attributes are for also configuring the IOBs.

35.   As per claim 38, Schultz et al. discloses wherein the diagnostic controller is

further adapted to send the configuration signal to the configuration controller in

response to a configuration instruction received from the diagnostic interface in column

4, lines 52-61.

36.   As per claim 39, Schultz et al. discloses wherein the configuration controller is

further adapted to receive the configuration signal from a source external to the device

in column 4, lines 52-61.

37.   As per claim 40, Schultz et al. discloses wherein the diagnostic interface is a

JTAG interface in column 8, lines 24-41.

Claim Rejections - 35 USC § 103

38.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the

> invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

39.   Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shultz et al. in view of Webopedia. As per claim 4, Schultz et al. discloses wherein the configuration memory comprises a I/O configuration memory adapted to store the first attribute value in column 6, lines 17-51.

Schultz et al. discloses storing the attribute values of the IOBs and CLBs in the same memory, configuration memory disclosed in column 6, lines 17-51.

Schultz et al. fails to explicitly state a core configuration memory adapted to store the second configurable attribute value.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have a core configuration memory adapted to store the second configurable attribute value. A person of ordinary skill in the art would have been motivated to have a core configuration memory adapted to store the second configurable attribute value because a second memory can be used to store additional data used within the system.

40.   Claims 7,8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shultz et al. in view of Jacobson (USPN 7020598B1). As per claim 7, Schultz et al. fails to explicitly state wherein the serial data connection is adapted to receive a second I/O value from an I/O connection of a second device and to send the second I/O value to a third device.

Jacobson discloses this limitation in column 6, lines 11-22; column 7, lines 13-25; Figure 2. The configuration information includes I/O configuration information.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to the serial data connection be adapted to receive a second I/O value from an I/O connection of a second device and to send the second I/O value to a third device. A person of ordinary skill in the art would have been motivated to have the serial data connection be adapted to receive a second I/O value from an I/O connection of a second device and to send the second I/O value to a third device because the proper configuration of the PLDs can be determined by sending the information to be analyzed.

41.   As per claim 8, Schultz et al. discloses wherein the diagnostic interface is a JTAG interface in column 8, lines 24-41.

42.   Claims 16,25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shultz et al. in view of Hunter et al. (USPN 6067648A). As per claim 16, Schultz et al. fails to explicitly state wherein the diagnostic controller further includes a pulse generator for generating the signal.

Hunter et al. discloses this limitation in column 6, lines 36-69.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to the diagnostic controller further include a pulse generator for generating the signal. A person of ordinary skill in the art would have been motivated to have the diagnostic controller further include a pulse generator for generating the signal because the pulse generator is used to control the speed to which signals are generated. Hunter et al. discloses this in column 2, line 66 – column 3, line 3.

43.   As per claim 25, Schultz et al. fails to explicitly state wherein the diagnostic

controller further includes a pulse generator for generating the configuration signal.

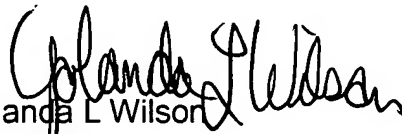Hunter et al. discloses this limitation in column 6, lines 36-69.

Accordingly, it would have been obvious to one of ordinary skill in the art at the

time the invention was made to the diagnostic controller further include a pulse

generator for generating the configuration signal. A person of ordinary skill in the art

would have been motivated to have the diagnostic controller further include a pulse

generator for generating the configuration signal because the pulse generator is used to

control the speed to which signals are generated. Hunter et al. discloses this in column

2, line 66 – column 3, line 3.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Yolanda L. Wilson whose telephone number is (571)

272-3653. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).

Yolanda L Wilson
Examiner
Art Unit 2113